

Title: Flax Seed Specific Promoters
Inventor(s): Sarita CHAUDHARY,
et al.
DOCKET NO.: 058187-0109

FIGURE 1-1

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FIGURE 1-2

FIGURE 1-3

FIGURE 1-4

3680 tccttgcataaaaatctggaaattccggcatcaactactgcccacccatctgcttaagggtttatccaaaaaggctga 3759
3760 gcgtgattccttgcgtcttgctccgaaatccgtatgttatccactgagctttccatctccttcaggcttatgttc 3839
3840 accaatgcgtcctcgccgaacacacactttggcgatcaacttcgcaggaaatcccatcaagtccacactctccatcaaggcagacct 3919
3920 gcaaacccaaataagaacacaactccaaagtcaacgatcaatttctccgcctttatgaaaaaaggaaacttctgggt 3999
4000 acttacgggtccgtcagacacttcataatttgtagacttgcattgttatgtttccaggaaattccctcgttctgaaatttgttgc 4079
4080 gttaacagcaacccgtcagacagaagataatcgc当地atcgaaaatttaaagataactggatgacttagccacagacataatctaa 4159
4160 ttcttagaagtaaaaaccttattttccattcaaaattctgccacatagtcggaaacgcagcatccgagcaagaaggagg 4239
4240 agatgttaatccatgtatcgatgtggatatcgatgttggacactgaacgttccatcacattgg 4305

FIGURE 2-1

FIGURE 2-2

1361	aggcaagatcatgacacgtcgaaagttaaatggactcataacaaggtaataaaaccqaatga	1440
1441	ctttgatcttactaaggctttagatcattgaaacataattaaataatcgtaataaaat	1520
1521	cattcaaaacgtataaccaaaaacaaaggccaaacaaaataatagacggtaatggatgttcgagcc	1600
1601	atccaccctttcccaagttttttactcgccaggctaccgcacacgtttactctatgcatacacaagaaccccttccctttaagaaccaccacgc	1760
1681	cagagcccttactcgccaggctaccgcacacgtttactctatgcatacacaagaaccccttccctttaagaaccaccacgc	1840
1761	cacctccctctcacaaacactcataaaaaaccctttttttcccaagttcaatattgttcacagctaagcaag	1840
1841	aactcaacaaca ATG GCG GAT CGT ACA ACA CAG CCA CAC CAC GTC CAG GTC CAC ACC CAG CAC	1903
1	M A D R T Q P H Q V Q V H T Q H	17
1904	CAC TAT CCC ACC GGC GGG GCT TTC GGC CGT TAT GAA GGT GGA CTC AAA GGC GGT CCA CAT	1963
18	H Y P T G G A F G R Y E G L K G G P H	37
1964	CAC CAG CAA GGA TCA GGC AGC GGC CCA TCA GCT TCC AAG GTG TTA GCA GTC ATG ACC GCG	2023
38	H Q G S G S G P S A S K V L A V M T A	57
2024	CTC CCC ATC GGC GGG ACC CTC CTT GCC TTG GCC GGG ATA ACC TTG GCT GGG ACG ATG ATC	2083
58	L P I G G T L A L A G I T L A G T M I	77
2084	GGG CTG GCG ATC ACC CCG ATT TTT GTC ATC TGC AGC CCT GTT CTA GTC CCC GCC GCT	2143
78	G L A I T P I F V I C S P V L V P A A	97
2144	CTG CTC ATC GGG TTT GCC GTG AGC GCG TTT CTG GCC TCG GGG ATG GCC GGG CTG ACA GGG	2203
98	L I G F A V S A F L A S G M A G L T G	117
22204	CTG ACC TCG CTG TCG TGG TTT GCG AGG TAT CTG CAG CAG GCT GGG CAG GGA GTT GGA GTG	2263
118	L T S L S W F A R Y L Q Q A G Q G V G V	137
2264	GGG GTG CCG GAT AGT TTC GAG CAG GCG AAG CGC ATG CAG GAT GCT GCT GGG TAT ATG	2323
138	G V P D S F E Q A K R M A G Y D A A G	157

FIGURE 2-3

FIGURE 3-1

1 tccactatgttagtcatatccattttaattttgggcaaccattcaattccatcttgccctttagggatgtgaatatga 80
5' primer (1)
AT rich

81 acggccaaaggtaaggagaaaaaataatccaaatttaaaggccaaagtagggccaaatgtacacttgtca 160
AT rich

161 tcgcgcaaatttagtaaaatatcgccatattgtattcccacattaaataccgttatatgtattggctgcatttgc 240

241 atgaataatacgtgttaaggccaaaggaccacgtgttagcccatgccaaaagttaaaccacccatcccgt 320
RY G box seed-specific

321 ctccactataaaccccaccatccaatccatccaaaccacccacaccgactcqactctcacaccttaaagaa 400
TATA 3' primer (1)

401 ccaatcaccacaaaaATGGCAAAGCTGATGAGCCTAGCAGCCGTAGCAACGCAGTTCCCTCCTGATCGTGGAC 480
1 M A K L M S L A A V A T Q F L I V V D 21

481 GCATCCGTCCGAACCACAGTGTATTATCGACGAGGACCAACCAAGGCCGGGGAGGCAAGGGCAGGGACAGCAGC 560
22 A S V R T T V I I D E E T N Q G R G G K V A G T A A 48

561 AGTCTGGGAGGCAGCATCCAGGAGACTTCCTGAGGAGCTGCCAGGCAGTTCATGTGGAGAAAGTCCAGAGGGCG 640
49 V C E Q Q I Q Q R D F L R S C Q Q F M W E K V R G G 75

641 GCCACAGCCACTATTACAACCAAGGGCCGTGGAGGCAACAGAGCCAGTACTTCGAACAGCTGTTGTGACGACCTTA 720
76 H S H Y N Q G R G G E Q S Q Y F E Q L F V T T L 101

721 AGCAATGGCACCAGGGCTGGCACCATGCCAGGGACTTGAAGCGTGCATGGC^{AA}ATGAGGCAAGCAGCTGTTGTGACGAC 800
102 S N C A P R C T M P D L K R A I G Q M R Q E I Q Q Q 128

801 GGGACAGGAGGGACACGGAGGAAAGTTCAAGGGTGGATCCAGCAAGCTAAACAATGCTAAGGACCTCCCCGGAC 880
129 G Q Q G Q Q E V Q R W I Q Q A K Q I A K D L P G Q 155

FIGURE 3-2

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FIGURE 4-1

FIGURE 4-2

1210	1220	1230	1240	1250	1260	1270	1280	1290	1300
ctgatcccgcatttgcacgtgcggccctccgtcccaagtcccttaagggtgtcacgcacgcggccaaattgggtgggtggcgtgcgcgtccctgtgctt									
<u>ABRE</u>									
1310	1320	1330	1340	1350	1360	1370	1380	1390	1400
cttaccggatgggtggaggttagttgggtctccggcgatggtagtggtgggtgggtgggtggatcaatttactttcttgc									
<u>R1</u>									
1410	1420	1430	1440	1450	1460	1470	1480	1490	1500
ttcaaaattttggcagaaaatttcatttagatttagaactggaaaccaggatgtatgagacggattaaagttagcattccaaacagagttacatcttttaaga									
<u>R2</u>									
1510	1520	1530	1540	1550	1560	1570	1580	1590	1600
aataatgttaaccccc <u>ttagactttatatttgcattaaaaataatttaacttttagactttatataatagtttatataataacttaataaccactcta</u>									
1610	1620	1630	1640	1650	1660	1670	1680	1690	1700
ttattttatatcgaaaactatttgtatgtctccccctctaaataaaacttggattttacagaacctataatcaaataatcaactcaactgaagtttg									
1710	1720	1730	1740	1750	1760	1770	1780	1790	1800
tgcatgttaatttgcacccatggccaaatgcacttagattttaccaaccggaaatggccatccatcaatcatgcggccgtttct									
1810	1820	1830	1840	1850	1860	1870	1880	1890	1900
ttctctgtccacatatccccctctgaaaacttgcacccatgtgcacttgcattgtccttattacgtgttacaaaatgtacccatgcatccatgcggaa									
1910	1920	1930	1940	1950	1960	1970	1980	1990	2000
gaatggcgcaagaaccctccctccatccattttatgtggcaccatccaccatctccgcattaaacacccatcaacttgcacccatcaacttgcacccatca									
2010	2020	2030	2040	2050	2060	2070	2080	2090	2100
tcactacttgcattccaaaaatccacccatGGCTAGATCATCAAGGCCCTTGCTTCTCATCTGCATTTCGCCATTCTCCACTCTTC									
<u>CAAT</u>									
2110	2120	2130	2140	2150	2160	2170	2180	2190	2200
TCTGGGTAGGCAGGAAATTCCAGCAGGGAAACGAGTGCAGATCGACAGGATCGACGCTCATCCGGCCGACAAAACCATTGGCAGAAGCTGGCACCATC									
<u>TATA</u>									
L	G	R	Q	Q	Q	Q	V	V	V
E	V	W	D	Q	N	E	C	F	Y
Signal sequence									
M A R S S P L L S L C I F A I L F H S I									
GAGGTATGGGACCGAACGCCGAATTCCAGTGCCTGGTTGTAAGGCCAAAGTCATGGCAGCATTGAGCCCTTCTCTTGCTTCTACAGCA									

FIGURE 4-3

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FIGURE 4-4

FIGURE 4-5

4210 4220 4230 4240 4250 4260 4270 4280 4290 4300
gaatgattccattaaactacaaggcccttggcgccggagaagtgtttggcgccggcggagaaggactcgaggacgcggacttcggagactcgaggcccttgatgaggcagagt
4310 4320 4330 4340 4350 4360 4370 4380 4390 4400
tttacctgccaggccgttggtaaggggaaagggcccttcttggatggtagttcaggcaagcgg
4410 4420 4430 4440 4450 4460 4470 4480 4490 4500
gacgtcntcgttcnngggaggcggnattcatggatggttaaatctgttagtctcgagggtctcgagggtctcagggaggccnaaagacgttggaaaccgtcgncgt
4510 4520 4530 4540 4550 4560 4570 4580 4590 4600
ttggggcatcaagtncggggcacgcctccctgtccanaancnangtanataaaagaaatggaaattaantaaatggnaatnannnaggagg
4610 4620 4630 4640 4650 4660 4670 4680 4690 4700
attgnaacgggtcnganccgnangaaanagttttannggttaataactgg
4710 4720 4730 4740 4750 4760 4770 4780 4790 4800
gaggntncanng
4810 4820 4830 4840 4850 4860 4870 4880 4890 4900
cnnggaccnngnntgggttnanaaggaaattingtngnangganaanaccnntttacnatttgccctttgaggnnngtntggcncnntncnggg
4910 4920 4930 4940 4950 4960 4970 4980 4990
nacatnccgctgcatggctttggggggccnmanaggnagccnccanggnannngnccctgtncangncgctnaagttcnatgtanatggncgttgg

FIGURE 5

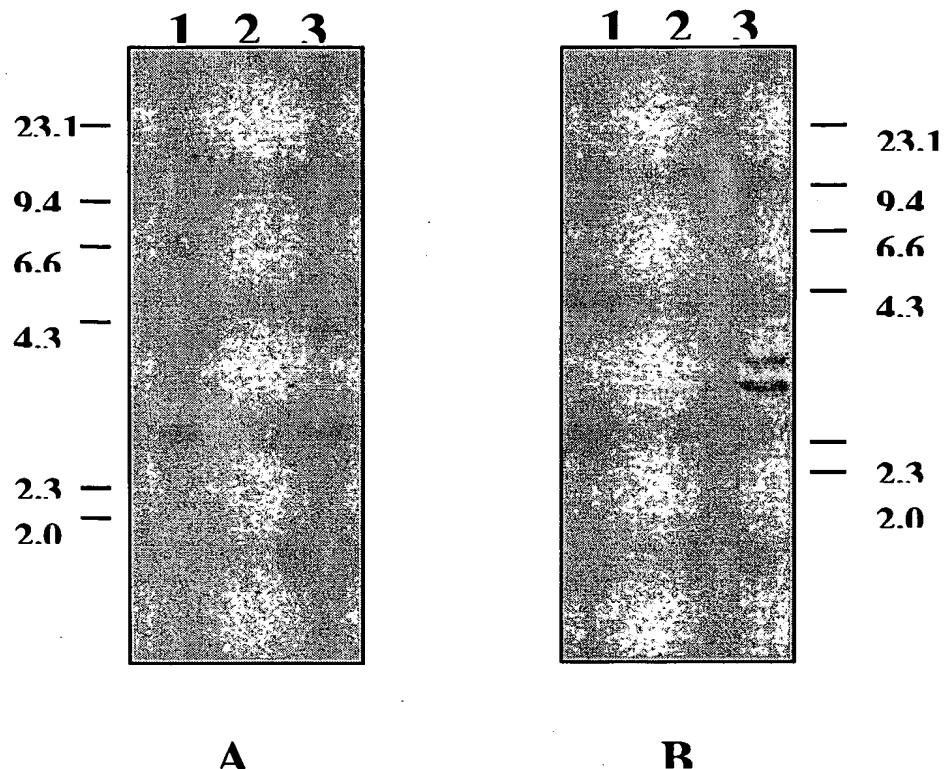


FIGURE 6

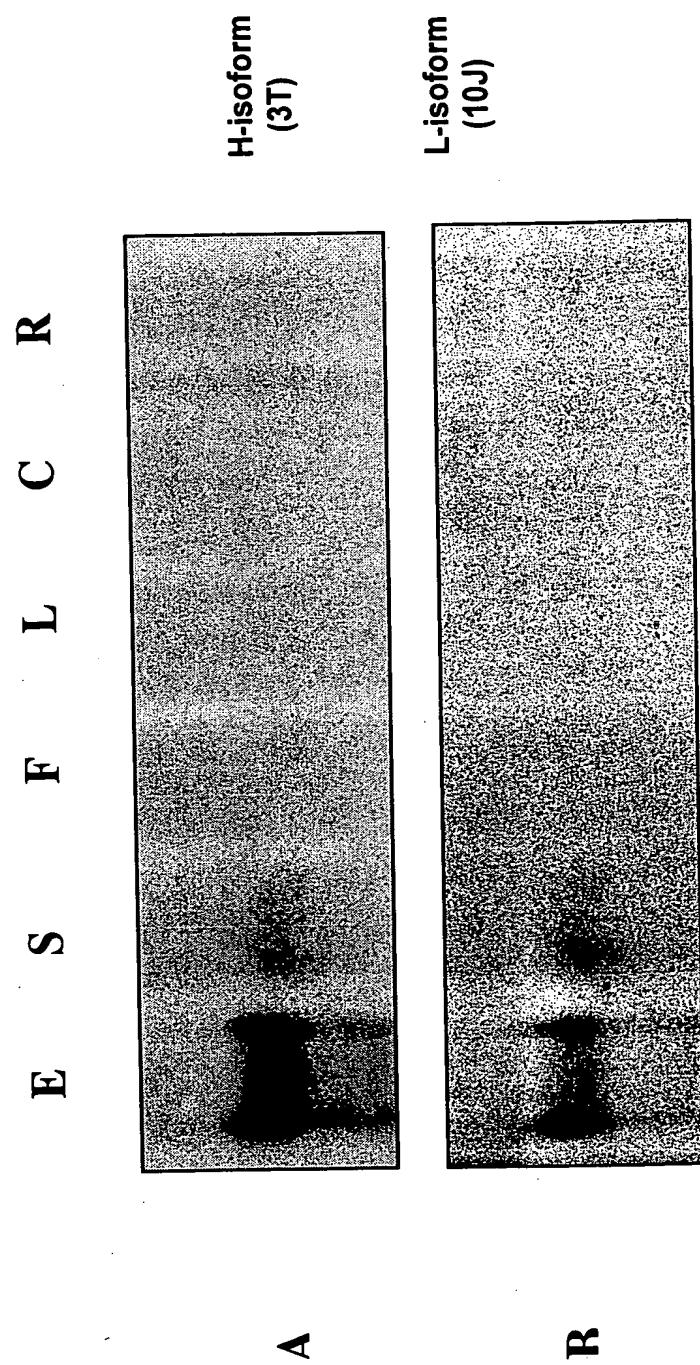
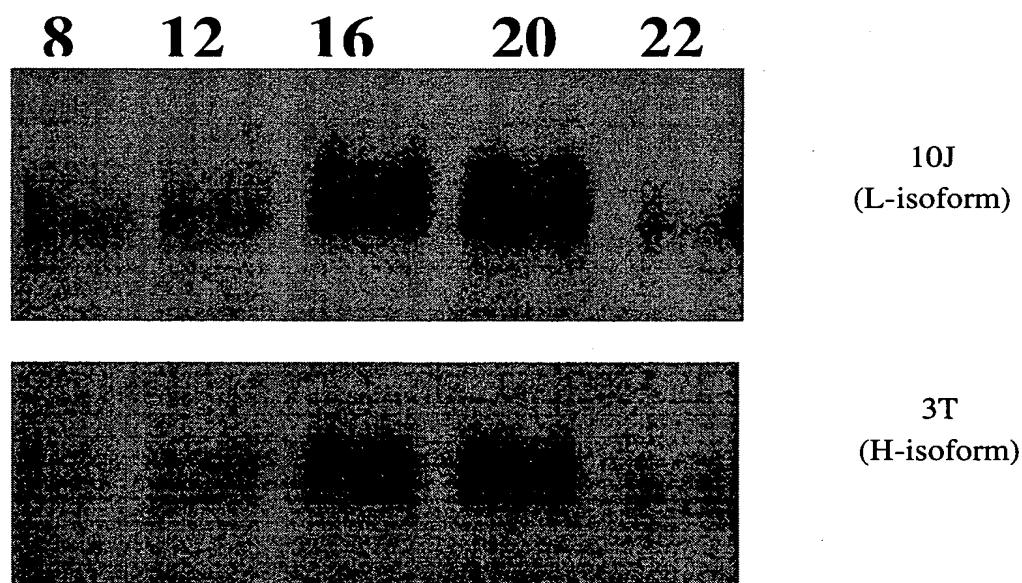


FIGURE 7



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FIGURE 8

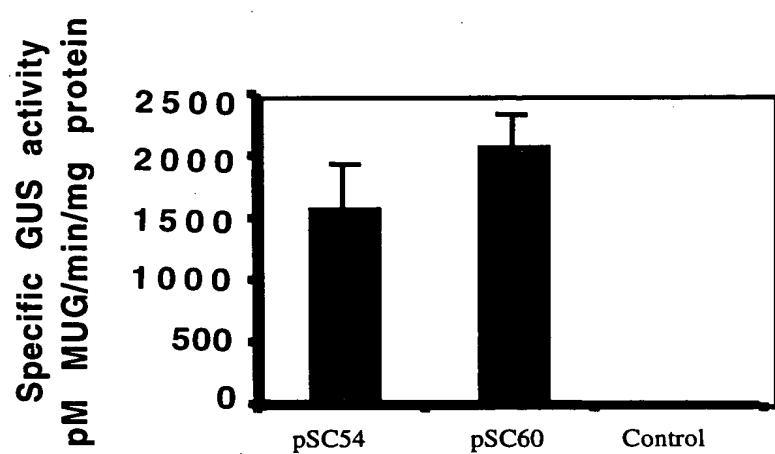
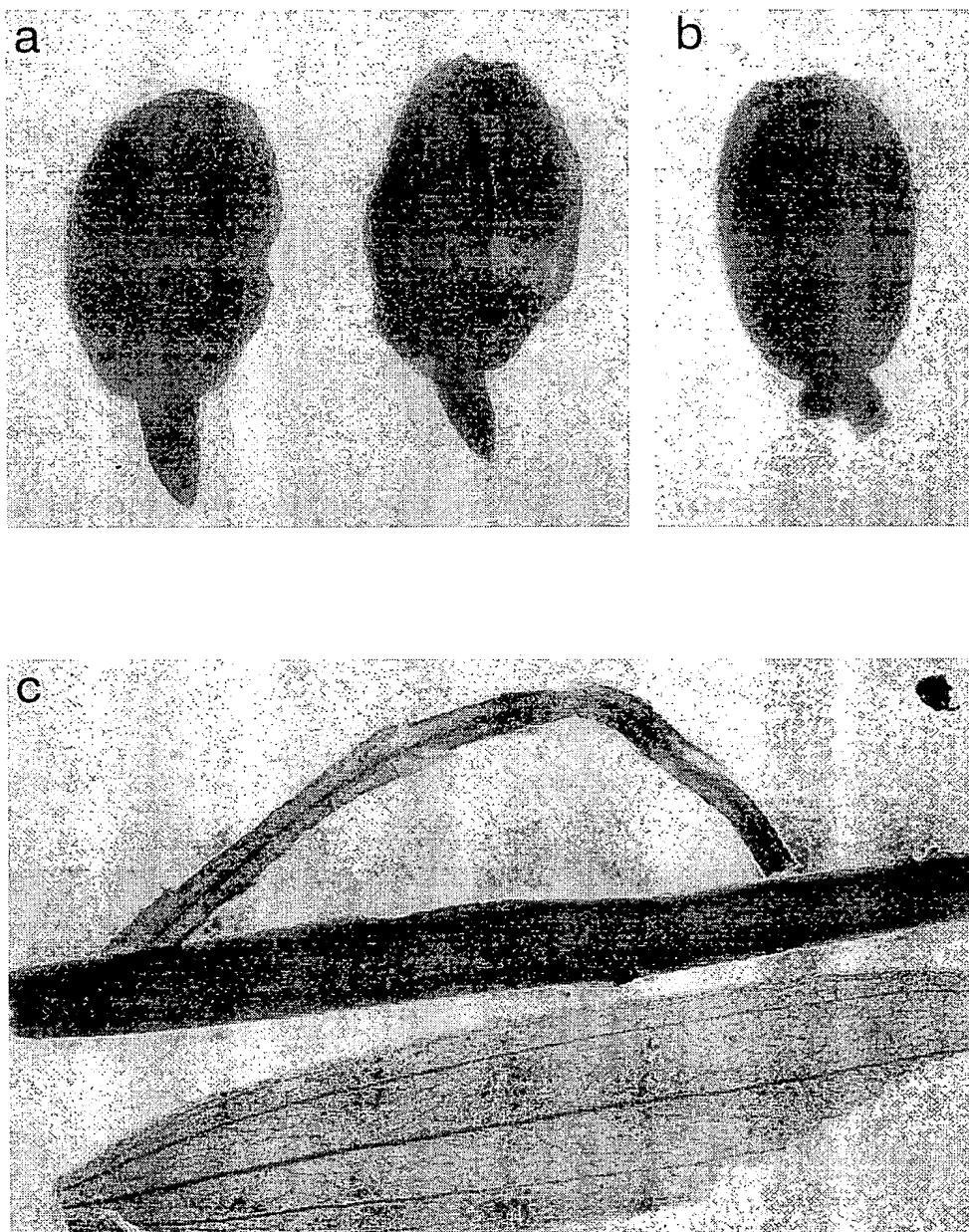


Figure 9.1



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Figure 9.2

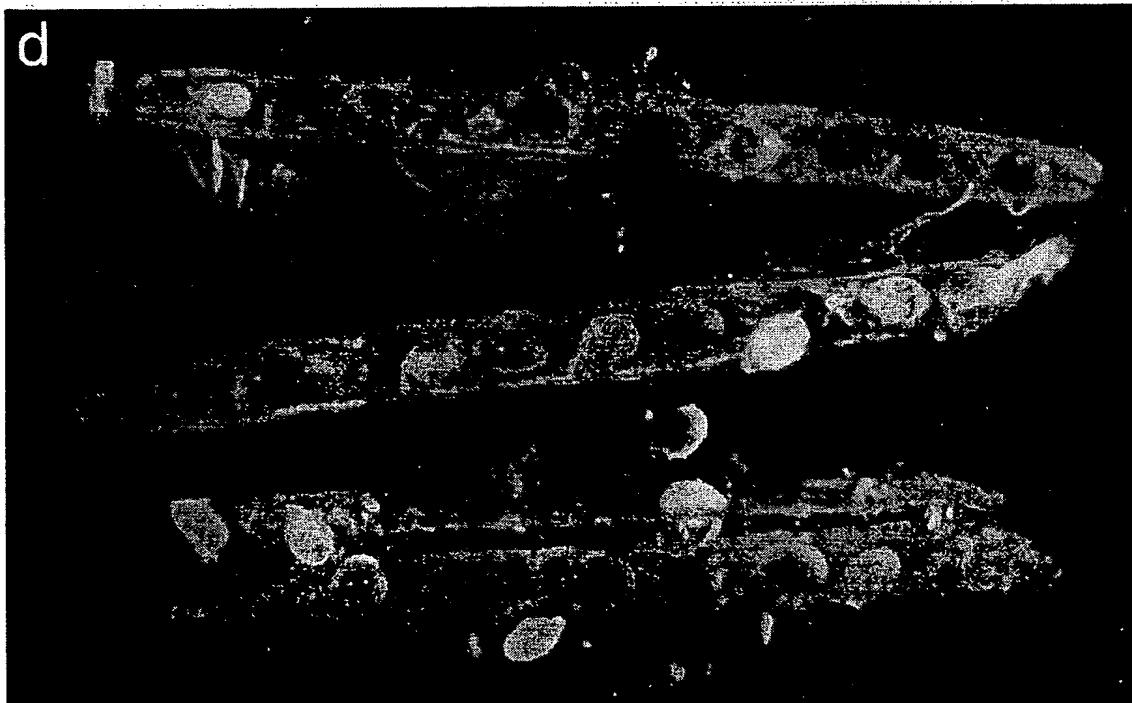
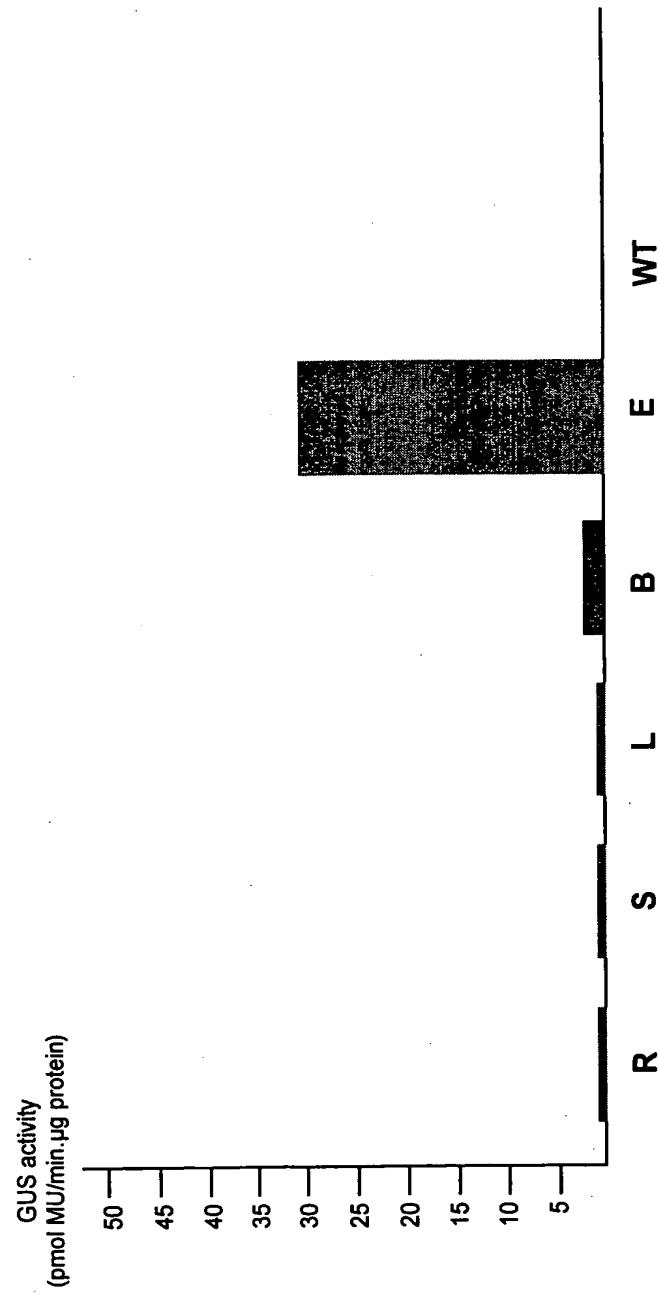
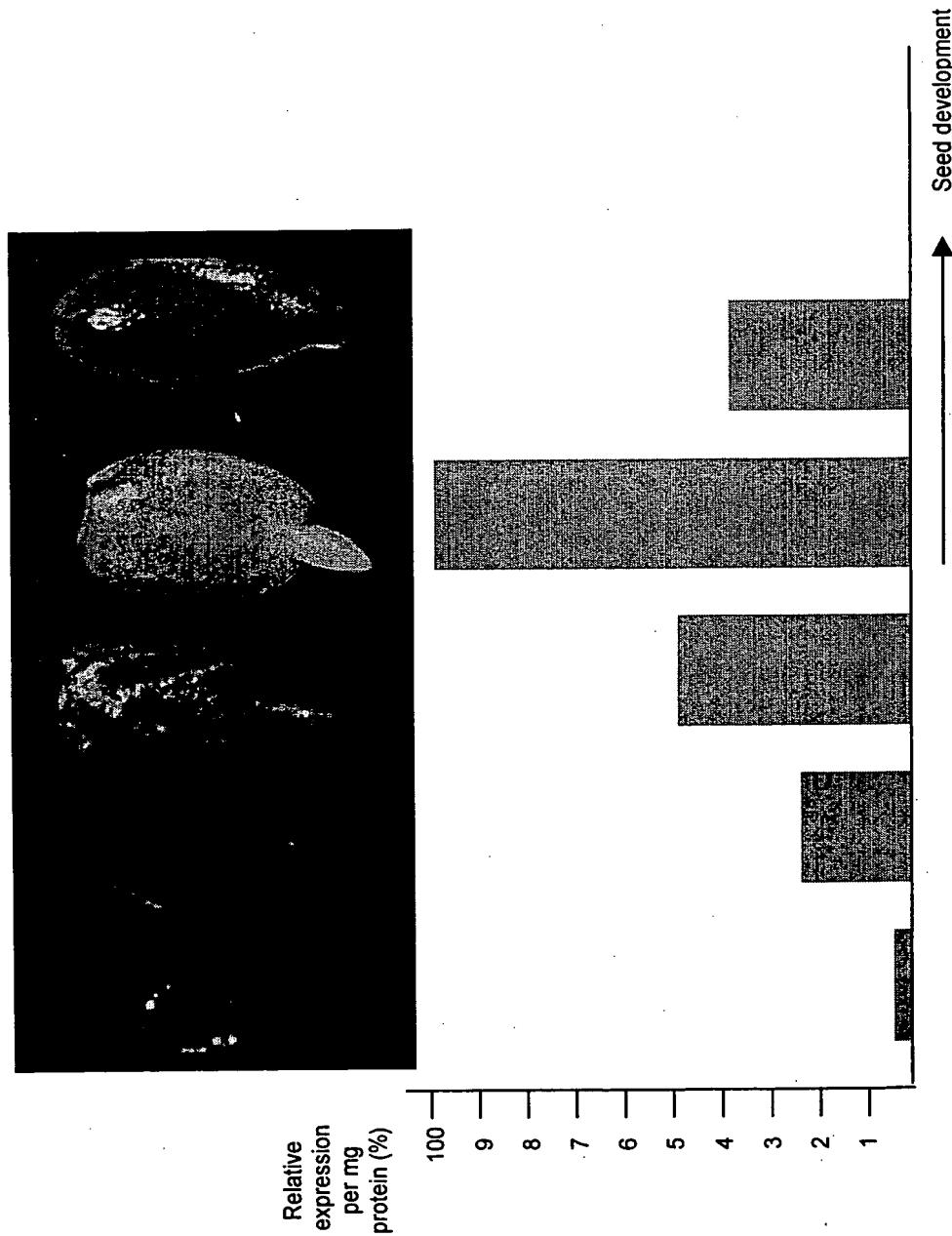


FIGURE 10



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FIGURE 11



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FIGURE 12

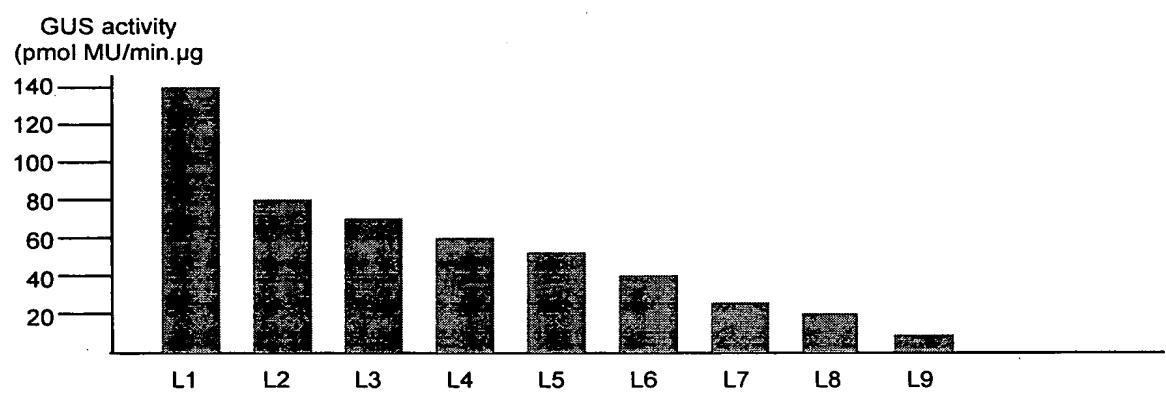


FIGURE 13

